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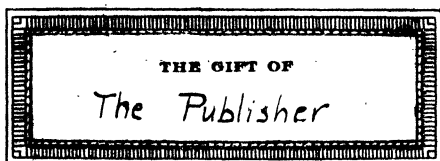
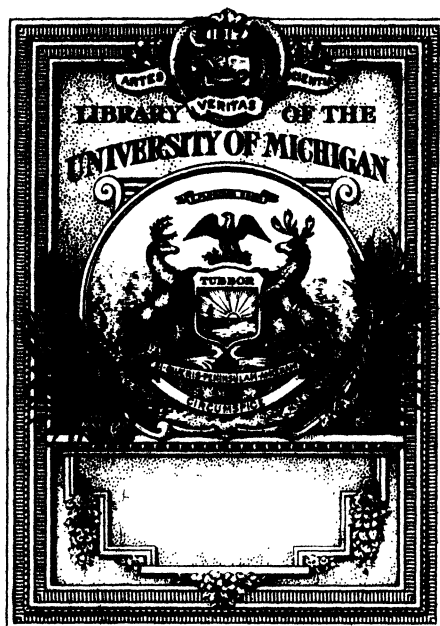
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# *The* AMERICAN DENTAL JOURNAL

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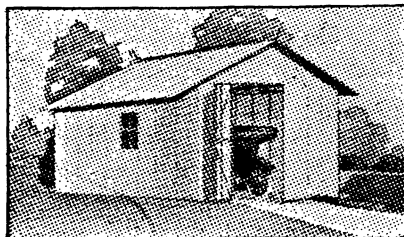
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August 15

EDITORIAL AND COMMENT

1914

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## FEAR OF PAIN—AND DENTAL NEGLECT

### PART III

Fear of being hurt is not always the real or existing cause which keeps patrons from visiting the dental office; quite frequently there are other elements which enter into this dental neglect. Sometimes the person would be willing to endure excruciating pain, but is absolutely in fear of being placed under the hands of an uncleanly dentist.

It would surprise you to know how many people avoid having their teeth restored or repaired because they are afraid the dentist has not clean and well-cared-for hands. They dread the thought of his having subjected his fingers to a variety of mouths, possibly some of which were affected with some contagious trouble.

They also fear having instruments placed in their mouths

which have been left uncleaned after having been dipped into some pus-belching root, or exploring some malignant sore. This fear of being subjected to such dirty and neglected instruments naturally begets a distrust of the usefulness of dentistry, and such people would rather lose their teeth than to be burdened with the thought of being inoculated with other patients' diseases.

This is a natural and rational cause for being alarmed; for the subject of digital and instrumental cleanliness is still too little appreciated by a minority of dentists. Which would



#### NEAT AND CLEAN OPERATORY

mean that of the 116,000 dentists there are still at least 50,000 who could make sanitation a more pronounced feature of their personal equation.

This fear on the part of patrons leads many to leave the dental office in despair, and never again return, while others will seek a new operator. The remark will be made: "He did my work quite satisfactorily; but his fingers, his clothes, his instruments, his napkins and his entire office was in such a neglected, uncleanly condition I was shocked at the reign of dirt and obliged to go elsewhere."

If you have any doubt on this subject of cleanliness as a practice builder, you have been asleep and need an awakening.

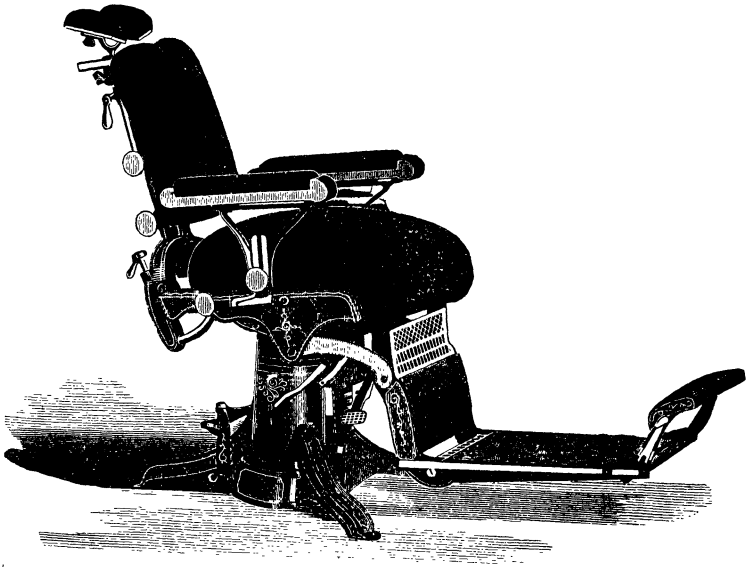
The time will come—it should come—when the state boards of dental examiners will visit dental offices; and where indif-



ference to office cleanliness and finger sanitation and instrument sterilization is evident, the license to practice should be temporarily suspended, and not restored until the practitioner assures the board that these neglected conditions will be corrected.

These gross oversights and deliberate violations of the rules of common cleanliness should be observed.

We are all too careless about a million things which relate to the cleanliness of the office and our methods of practice. We



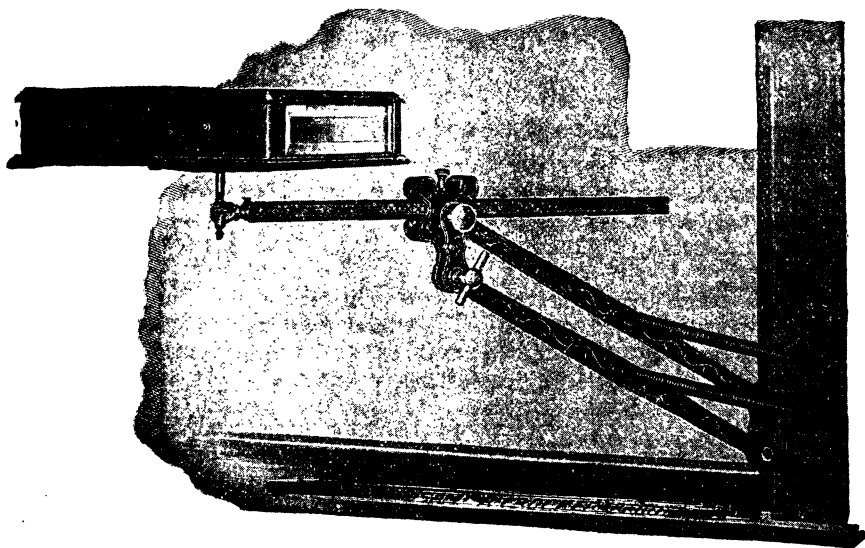
ANY CHAIR IS GOOD IF CLEAN—ANY CHAIR  
IS BAD IF FILTHY

all need to be reminded that patients fear to be operated upon with instruments and by hands that are not free from dirt or the bacteria of other mouths.

It requires time to keep clean; it takes during the year many hours to have the instruments sterilized; and all this time must be paid for, and the only way to allow for this cleaning policy is to charge for the service. If people get to know

that you charge higher prices because you take the time to keep your place clean, and disinfect your instruments, and attend to them in an honest, earnest way, the additional price you charge will be gladly allowed to you.

If you can wash your hands where the patients can observe this preoperative procedure, all the better. Convince them—without saying a word—that you are delighted in the care of



#### KEEP BRACKET CLEAN

your personality, and it will go a long way to drive away that fear, which is inborn in the particular patron.

Dip every instrument in a solution for disinfection; and do it so your patient can see the act. The world is growing more particular along this line; and if you wish to retain your practice, and hope to establish a reputation in the profession, you must observe the rules of sanitation and live up to the common understanding of cleanliness. We all need to be told of these things. We somehow do not enjoy this sort of scolding; yet many of the things which we did not enjoy in our youth—among

them the scene in the woodshed, with father acting the star role and a switch playing the active part, with yourself impersonating the "heavy"—had a good part in the building of your present splendid practice. So, too, with other phases of our youth. What boy has never been called back, before going to school, to comb or brush his hair? What boy has not heard his sister scold because he was not washed or dressed clean enough to go to the birthday party? Well, we never quite get through with the battle against uncleanliness. And now, since we are a part of a learned profession,—now more than ever,—should we, in the interest of humanity, take the time to keep clean and have the instruments in the best of condition.

When you have removed from the minds of your patients their dread or fear of neglected instruments and unclean hands you have prepared them for comfort, and they will resign themselves gladly to your judgment.

This fear of dirt—or mysophobia—is abroad, and is found in all families in various degrees. This element of fear has a beneficial side, and is the item which leads to more good than harm.

Dubois says that fear, within certain limits, is an eminently useful emotion. Fear drove men into groups; thus society was born. Fear made men forebend against the hunger of lean seasons; thus thrift was born. Fear drove men to plan and scheme; thus progress came. Such has been the work of fear—the servant.

Fear the master produces misery. It produces disease. It is disease. In Stedman's "Medical Dictionary" is found eighty-two kinds of morbid fear. A phobia is defined as any unreasonable or insane dread of fear. The fear of bacteria is bacteriophobia; of being alone, autophobia; of being buried alive, taphophobia; of being stared at, scopophobia; of crowds, ochlophobia; of cold, psychiophobia; of death, necrophobia; of dirt, mysophobia; of drafts, ærophobia; of high places, acrophobia; of being shut in, claustrophobia; of water, osmophobia; of rabies, lyssophobia; of syphilis, syphilophobia; of tuberculosis, tuberculo-phobia; of odors, osmophobia; of disease, pathophobia.

To keep the hands clean is desirable; to be afraid of dirty

hands is proper. Yet the fear of dirt on the hands is sometimes so commanding as to be a phobia; and it may even be so excessive as to constitute an insane obsession.

To be reasonably on one's guard against contagion is good sense. While fear underlies the precaution, it is fear the servant. Bacteriophobia is, on the other hand, too much of a good thing.

To take ordinary precautions against falling off a high building is good sense. It is based on fear the servant.

To be morbidly afraid of high places is acrophobia.

Stedman gives his list of eighty-two phobias. It would have been just as easy to make it 182. When a man has a phobia the trouble is not with that which he fears; it is with the man himself. A man who is neurasthenic, or neurotic, or illy-balanced, can ge up a phobia about anything. If he finds that someone else has preempted his phobia, he can invent a new one, to be indulged in by himself only.

Perhaps the most ridiculous of all the phobias is phobophobia, or the morbid fear of fear. Some men are so afraid of being afraid, or of showing fear, or of others thinking that they are afraid, that they become morbidly afraid of fear—phobophobia.

It all leads back to this: There is nothing intrinsically wrong with fear. It is one of the most useful servants that man has ever had. As his slave it has brought him power, clothed him with riches and brought him happiness.

However, fear as the master is a tyrant, a czar, a murderous wretch.

The need is for the balance, the poise, the common sense, that makes fear serve; that prevents fear from mastering.

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THE AMERICAN DENTAL JOURNAL. One year for one dollar.

# ORIGINAL CONTRIBUTIONS

## BONE TRANSPLANTATION AND ARTIFICIAL MENDING

BY PROF. JOHN B. MURPHY

[Every day is bringing the dentist nearer to the true definition of his degree—D.D.S., doctor of dental surgery. We are mostly engaged in surgery, while prosthesis follows closely second. We cut out, cut off and cut in, and we replace, reproduce and repair; hence subtraction and addition are our mathematical lifework. Dr. J. B. Murphy, famed as a molder of bone and an adept in its varied repairs, brings to the readers a new and fundamentally classic contribution. We must become more informed in basic surgery before we may attempt daring operations on the jawbone, but he makes the task possible since he leads you to comprehend the nature of the frame on which you daily labor. Personally I thank Dr. Murphy for this classic contribution. The illustrations are all made from original photographs.—EDITOR.]

[Continued from page 192 of the July issue.]

The second stage consists of the prolongation into the cartilage of processes of the osteogenetic layer of the perichondrium, which has now become periosteum. The processes consist of blood-vessels and cells, osteoblasts or bone-formers, and osteoclasts or bone-destroyers. The latter are similar to the giant cells found in the marrow. They excavate passages through the new-formed bony layers and grow through into the calcified matrix.

Wherever these processes come in contact with the calcified walls of the primary areolæ they absorb them, and thus cause assimilation of the original cavity and the formation of larger spaces, known as medullary spaces. These spaces become filled with embryonic marrow, consisting of vessels carrying osteoblasts on their walls, and derived in the manner described above from the osteogenetic layer of the periosteum. The walls of these medullary spaces are at this time of inconsiderable thickness, but they become thickened by the deposit of layers of new bone in their interior.

These centers of ossification and the epiphyseal line of osteogenesis must be borne in mind in every arthroplasty performed on persons under adult development, as any interference with the osteogenetic epiphyseal line causes deficiency of growth in length; or if part of the line is removed, deviations in conformation often occur.

#### INDICATIONS FOR BONE TRANSPLANTATION

In order to achieve the best results in the work of bone-grafting and bone transplantation, the following laws must be observed:

1. The periosteum fully detached from bone and (1) transplanted into a fatty or muscle tissue bed in the same individual, if he be young, may produce a lasting bone deposit; (2) transplanted into another individual or animal of the same species and under the same conditions, it rarely, if ever, produces a permanent bone deposit; (3) transplanted into another species it never produces a permanent bone deposit.

2. Periosteal strips elevated at one end from the bone and attached at the other, if turned out into muscle or fat, reproduce regularly bone on their under surface for a greater portion of their entire length.

3. Transplanted into other individuals or animals of same species and contacting at one end with exposed or freshened bone it rarely produces permanent bone, even for a small extent at its basal attachment, and never produces bone for its full length.

4. Bone with its periosteum transplanted into muscle, fat, etc., in the same individual, and free from bony contact, practically always dies and is absorbed, except in the case of very young children or infants. Transplanted into another species it is always absorbed.

5. Bone transplanted without the periosteum into the muscle or cellular tissue always dies and is ultimately absorbed.

6. Bone with or without periosteum transplanted in the same individual and contacted with other living osteogenetic bone at one or both of the ends of the transplanted fragment always becomes united to the living fragments and acts as a

scaffolding for the reproduction of new bone of the same size and shape as the transplanted fragment if asepsis is attained. This new bone increases to such size as is necessary to give the support required by nature in the extremity in which it has been placed. It will scaffold the production of new bone even into the joint when it is surrounded by capsule, and tuberosities are produced in about the regular location, as in the normal anatomic conformation.

7. The transplanted fragment, no matter how large or how small, is always ultimately absorbed. The role it plays is to give mechanical support to the capillaries and blood-vessels with their living osteogenetic cells, as they advance from the living bone at both ends of the transplanted fragment into the haversian canals, canaliculi and lacunæ of the transplant. Now lamellæ are deposited around the new capillaries and these lamellæ fit into and adjust themselves in the graft, so that the bony union is actually formed and mechanical support given long before the transplant is entirely absorbed and replaced by new bone. Ultimately all of the transplant disappears as new lamellæ are formed by the osteoblasts, and the graft lamellæ are removed by the osteoclasts.

This conclusion is based on my observations and on analysis of the microphotographs and pathologic specimens, clinical and experimental, presented by others. The graft is *per se* not *osteogenetic*, but *osteoconductive*. The regenerative force and cells are entirely supplied from the osteogenetic cells on the capillaries growing from the living bone. The graft, however, is an absolute necessity in the regeneration.

8. The graft increases in size on the surface as bone increases in size histologically—i. e., by deposits beneath its newly-formed periosteum.

9. The muscles should be fixed or directed to the graft in the same relation as the normal anatomic fixation, if the muscular control is expected after the graft has become united, and the musculotendinous attachments should be accurately sutured to the graft at the point of desired union, either with catgut or phosphor-bronze wire.

10. Bone covered at the ends by cartilage and on the sides by periosteum, such as the phalangeal bones, even when contacting with living bone denuded of periosteum, dies, and is wholly absorbed. When the graft is covered with periosteum at the point of contact with the living bone, the haversian vessels do not penetrate the fibrous periosteum of the transplant, and regeneration fails. If the periosteum of the graft is split into shreds, then regeneration through it may take place.

11. Periosteum attached to the transplanted portion, if the graft is taken from young individuals, has a plus osteogenetic influence; in the middle-aged it is neutral; in those of advanced years it plays a minus role and, in fact, it is detrimental.

While these theories may finally be found defective in some of their details, they represent my observations in the experimental and clinical work I have carried on. Bone reproduction, from a practical standpoint, is permanently and for all time settled both as to its feasibility and its practicability, and the extent to which it can be carried out to meet the mechanical conditions essential to its evolution.

The indications for bone transplantation are:

a. To correct deformities resulting from defects of development, as aplasic extremital bones—radius, ulna, humerus, tibia, fibula and femur, and congenital saddlenose, aplasic mandible, etc.

b. To produce union in ununited fractures.

c. To replace bone removed by destructive infections, osteomyelitis, tuberculosis, lues, etc.

d. To restore or supplant fragments dislodged or destroyed by fractures, as the head of the humerus, head of femur, shaft of tibia, etc.

e. To replace bone removed for non-malignant neoplasms, cysts, myeloma, osteitis fibrosa, etc.

F. To replace bone removed for encapsulated malignant disease, as giant-cell and chondro sarcoma.

Congenital or acquired defects of the nasal bones can be remedied by transplanting a periosteal covered fragment of the patient's ulna, tibia or fibula of such shape and size as is required



to remedy the defect. The periosteal covering should be directed outward, and the free medullary margin of the bone inward.

The transplant must have a bony contact with the frontal bone itself, with a surface that is freed of periosteum, or with the nasal process of the frontal bone, or with the periosteum-free surface of the nasal bones. It must be fixed in this position.

The incision in these cases should be made on the side of the nose, and the flap elevated so that the graft will be completely covered with skin, and there will be no tendency to separation of the edges or exposure of the graft to air after its implantation. If possible, it is best to make a small incision near the tip of the nose, and then elevate the periosteum and make a subcutaneous pocket extending from tip upward to the frontal bone. Into this pocket the transplant can be placed safely.

In tuberculosis of the bone, a rare condition in this country, but a common one in Scotland, as shown by Mr. Stiles, the periosteum can be preserved, and preserved aseptically, as a rule. Here the bone can be reproduced fully without the implantation of a fragment of bone from elsewhere, but it will be evolved more rapidly and the conformation of the limb more perfectly maintained if a fragment of bone fills in the gap.

If bone is not accessible, then a bar, plate or perforated cylinder of magnesium may be inserted to maintain the normal conformation of the extremity during the process of evolution of the involucrum of bone around the foreign body. As stated before, the magnesium will disappear in time, if it does not become infected.

In the removal of a tuberculous shaft in the child the periosteum should be freed from the bone, divided crosswise, and the shaft evulsed from its epiphyseal attachment. *The epiphyses must never be disturbed in children;* therefore, the bone should be fractured on the shaft side of the epiphyseal osteogenetic line. The gap then remaining should be filled with some non-elastic compact supporting material during the period of regeneration. The rapidity of absorption of the magnesium can be seen in the cases in which it was used.

The magnesium will be entirely surrounded by granulation tissue. If the periosteum has not been destroyed by the osteomyelitic process, an involucrum of bone will form around the magnesium and the latter will ultimately be adsorbed. Carbonated water, weak alkaline or mineral acid solutions (1 to 5 per cent) may be injected to dissolve the magnesium after it has fulfilled its purpose, if it does not disappear after a reasonable length of time has expired. It usually is rapidly dissolved by the wound secretions with evolution of hydrogen gas.

For malignant disease of bone, such as giant-cell sarcoma, large spindle-cell sarcoma, encapsulated chondrosarcoma and circumscribed intra-osseous sarcomata, the bone and periosteum can and should be removed for a considerable extent above and below the malignant focus. A fragment is then implanted to fill the gap. We know that a giant-cell sarcoma can be removed by a local operation and the patient survive without local or constitutional recurrence for years. We also know that the same thing is true, in a smaller percentage of cases, however, in the case of chondrosarcoma. In a still smaller percentage of cases the removal of a spindle-cell sarcoma by a local operation without an amputation can be accomplished and the patient live for years without recurrence.

This has led me to hope that the early removal of these neoplasms while they are still circumscribed and encapsulated should give good results. The bone can be removed to a considerable extent with its periosteum, with its musculotendinous attachments, and still an excellent functioning extremity be preserved. With this operative outlook early operation will be conceded by the patient, whereas early operation is practically never conceded when amputation is suggested.

#### ANKYLOSIS OF JAW

As a rule, it is not necessary to expose the anterior surface of the joint for the purpose of suturing the flap in place, but if this can not be accomplished satisfactorily, the anterior incision should be made. When only the posterior incision is made the flap is tucked down to the depth of the wound, and is sutured with phosphor-bronze wire to the posterior layers of the anterior

capsule of the joint, and laterally to the periosteum of the bone. The capsule of the joint is then closed in the usual manner, and likewise the external incision.

The bismuth subiodid powder and a collodion dressing are then applied, and over this a moist 5 per cent phenol gauze dressing is placed, and outside of this the dry dressing. The application of a three-fifths dorsal plaster cast, extending to the tip of the fingers, completes the operation.

The cast is removed temporarily in from five to seven days, and passive motion of the joint is instituted. After the lapse of ten or twelve days the cast may be left off, so that the patient can follow the usual instructions with reference to the use of this joint.

I wish again to emphasize at this juncture the value of the trochanteric fascia as an interposing flap in the performance of an arthroplasty on any joint. I have shown in my work, and it has also been shown by others, that the transplantation of free flaps of fascia is not only possible, but productive of the very best results. I favor the trochanteric fascia, or what I have referred to several times as the fascia lata, with the trochanteric bursa. It serves a most useful purpose when it is impossible to secure efficient tissue elsewhere in the vicinity of the joint, to supply as an interposing flap, and if this is borne in mind the arthroplasty can not fail to be entirely satisfactory. Ankylosis will not recur if sufficient tissue is interposed between the ends of the bones; and if this can not be obtained from the adjoining tissues, it may be taken from elsewhere, and especially from the fascia lata.

These autogenous flaps are applicable not only in the case of very thin patients who possess little subcutaneous fat, but also in that large class of cases where previous disease, infection and drainage have left practically no free tissue in the vicinity of the joint to be operated.

This is especially true of ankylosis following tuberculosis of the hip, knee and ankle, complicated with mixed infections.

The jaw has a particularly advantageous flap for mandibular ankylosis, because it may be placed in any position, and it is practically impossible to secure a flap in that region.

By making an anteroposterior, bow-shaped incision, with the convexity downward on one side, at the point where the neck begins to spread out into the broad angle, and a transverse bow-shaped division of the other side, with the convexity directed downward, the articulations are prevented from becoming displaced laterally subsequently, and no risk is run in dividing the bone or of injuring (a) the facial nerve or (b) the temporal bone. The incision should be made from the posterior margin of the ascending ramus, displacing the facial nerve and parotid gland. It is quite difficult to make this arthroplasty with the temporo-muscular flap, and particularly so in cases of ankylosis existing from infancy or early childhood, with aphasia of the mandible.

In 1898 I operated in a case of this kind in Mercy Hospital, and found the technic exceedingly trying. The patient was a young man about 24 years of age, in whose case the ankylosis had resulted from a fall on the chin when he was three years old. There was considerable aphasia of the bone.

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## UNIVERSITY EDUCATION — PROFESSIONAL TRAINING

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BY PRESIDENT EDMUND J. JAMES,  
University of Illinois

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[The following address was delivered at the Studebaker Theater, Chicago, Ill., June 11, 1914, before the alumni and graduating class of the College of Medicine, University of Illinois. President James, who has stood for advanced standing in the professions, has given here a classical definition of university education, and our readers will profit by studying this oration, which emphatically outlines the future for medicine, and dentistry as well.—EDITOR.]

I welcome you today into a *university* fellowship, and I wish to talk to you for a few minutes as to what this university fellowship means, or should mean. In the first place, from a general point of view; in the second place, from the special point of view of the study and practice of medicine.

There are many definitions of what the university is; and I presume that if you were to ask twenty-five different men in twenty-five different countries, you might get as many definitions as there were men and countries, based upon the service

which the particular institution labeled a university is doing for the country of which the definer is a citizen.

I take it that there is a common element in all these definitions, and that I wish to bring out in this definition, which I should formulate somewhat as follows: A university is a higher institution of learning which offers an opportunity for men to prepare themselves for the practice of the various professions, the successful pursuit of which rests upon a broad knowledge



PRESIDENT E. J. JAMES  
University of Illinois

of the sciences which underlie the successful art, this training itself to be based upon a proper preliminary preparation, which itself shall have in view the fitting of the member of the profession not only for the narrow calling which he may have chosen, but for the larger duties of membership in the social and political body of which he is a part.

In other words, an institution, in order to be called a university, should be concerned with the adequate training of men and women (who have the proper preparation) for the practice

of a calling which is rooted in the knowledge of the sciences underlying that calling.

For a long time there were only three professions recognized as within this category, as they had been developed in the older countries of Europe—namely, law, medicine and theology. For only in these professions was it required that a man who desired to practice them should, first of all, be an educated gentleman; second, that he should have a thorough training in the sciences underlying the practical pursuit of his



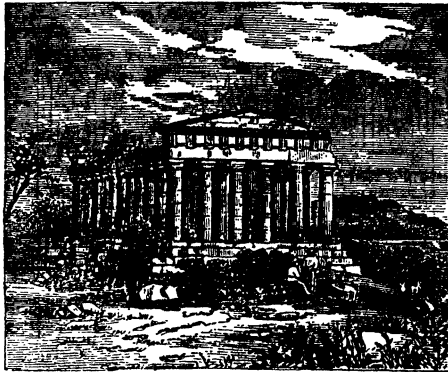
PRELIMINARY FOUR-YEAR HIGH SCHOOL

profession; and, third, should have such a knowledge of the art of his profession as a school may properly give.

This result was attained in the older world by requiring, first of all, that the candidates should have pursued a liberal course of study in the humanities; by which they meant, primarily, Latin, Greek and history. Second, a thorough training in the sciences underlying the profession, whatever that might be. If medicine, in chemistry and physics, anatomy, pathology, etc. If in law, the history and development of the Roman law, the history and development of law in general, etc. If in theology, the study of the classical languages, Hebrew, history of the church, etc. Hence these professions came to be called, par excellence, the learned professions.

Times have changed. However great a value we set upon

a study of Latin and Greek (and I, for my part, would set a very high value upon it); however we may estimate the value of the study of Roman law as an intellectual discipline and a liberalizing influence (and I, for my part, should set a high value upon this study); no matter how great the value of a study of Hebrew for a thorough knowledge of the holy scriptures (and I, for my part, should put a high value upon this study); yet I say, no matter how great the value we put upon these things, the time has passed when we can properly claim that the study of these subjects—any one or all of them—is an absolute essential of general culture, of university training. As



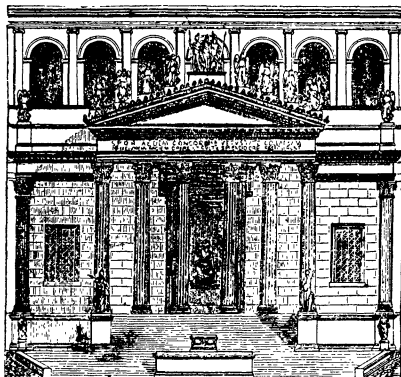
GREEK SCHOOL

a matter of fact, today, the world over, with the exception of a few institutions, nothing more is required in the study of Latin and Greek than a very small modicum, even for the conferring of the highest honors in culture or scholarship. It is no longer necessary for a man to be able to quote Virgil and Horace and Plato in order to be (or even to be considered) a cultivated gentleman.

But, friends, in this sacrifice of the ancient languages we have run the grave risk (in this country in particular) of sacrificing the fundamental thing which they were supposed to advance—namely, the general, liberal training which every

citizen of a free state should have as a basis for any kind of advanced professional study. The men of the learned professions ought by all means to be the leaders of the nation—not only in the departments which they represent in the narrow sense, but taken altogether in the life of the nation as a whole; and they can not do this unless by their training and their experience and their brains they are qualified to lead and able to lead. We must maintain, therefore, as a fundamental proposition, the doctrine that to any adequate professional education of a higher character a fundamental general, liberal training is vital and necessary.

We may differ as to how this education shall be obtained;



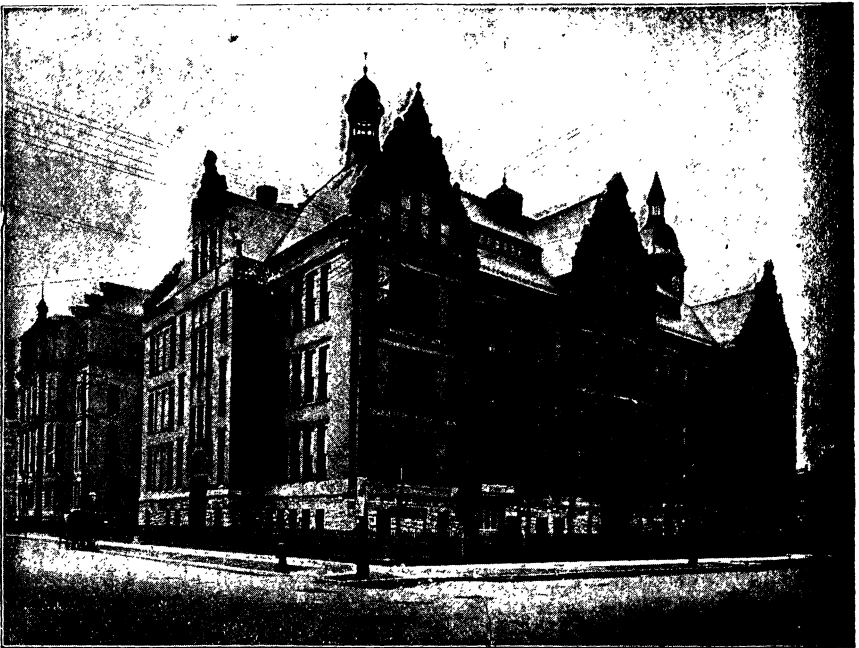
ROMAN SCHOOL

as to how much time shall be devoted to its attainment, and as to the elements that enter into it. But we are coming to an agreement in all countries, and (speaking of our own country) in all parts of our own country, that there is a fundamental, irreducible minimum of general culture and training which is necessary on the part of candidates for any calling which is to deserve the name of learned profession.

It has been a slow process,—a very slow process, indeed,—but the advance in the last few years in public ideas and public standards on this question have been phenomenal.



Some of our institutions have found themselves in such a position and have taken such an attitude on this question that they insist that no one shall be admitted to the study of medicine, for example, who shall not have completed the course necessary for a liberal degree in the standard American college. Others have been content to set the standard somewhat lower.



COLLEGE OF MEDICINE—UNIVERSITY OF ILLINOIS

Others have simply specified that students shall be properly prepared to take up the study of medicine, naming, perhaps, the subjects in which they must present themselves for examination in order to satisfy the institution that they have obtained this fundamental preparation, without naming any particular time that might be requisite for this. Others have prescribed the completion of two years in a college of liberal arts in addi-

tion to the completion of the ordinary American public high school of a four-year curriculum; and still others have been content with requiring simply graduation from such a high school, while others accept even a three-year high school course, with no very exact insistence upon even this requirement.

Now, it seems to me (and in this I am only speaking for myself, and do not undertake to voice the sentiment either of my colleagues in the faculty or on the board of trustees of this institution, or of the members of other faculties, or of other college or university presidents), that we should—and I think we shall ere long—accept the proposition that no student should be admitted to the study of medicine who shall not have had a satisfactory preliminary preparation. This satisfactory preliminary preparation will contain two elements—a knowledge of certain sciences which are fundamental to the pursuit of medicine, such as chemistry, physics, biology, etc., and a knowledge of subjects entirely outside of this particular field, such as history, language, etc.

I believe that a young man who has been in school during the compulsory school years, and who subsequent to that period has completed such a course as might be outlined, and would occupy his time until he is 20, or at most 21, ought to secure within that period this particular preliminary knowledge involving on the one hand the general outlook upon the world and its problems contained in the study of history and literature, and on the other the specific, definite, preliminary studies, such as chemistry, physics and biology, requisite for a fruitful study of the other sciences, which under our present classification constitute a part of medical study itself.

In other words, I have no doubt at all that the standard which will be set ere long for admission to our medical colleges is a course of study which, if we may formulate it concretely, would occupy the strength and attention of the student from 6 to 20 or 21 years of age. This would, under normal conditions, enable the average man to complete the essentials of the present curriculum of an American college, but it would not require that a young man should sit around an institution for one or

two years, dawdling his time away by the choice of soft electives, in order to obtain a Bachelor of Arts degree.

I believe that a man of this age, with such a training as indicated, would have the foundations for this broad outlook on human life which every practitioner of a learned profession ought to have; would have the technical knowledge necessary to qualify him for the study of the sciences embraced in the medical curriculum, and the mental training and maturity which would enable him to grapple successfully with the problems of this professional course.

Now, young men, many of you are going out into the practice of your profession with less than the training here described. You have been admitted to this institution; its facilities have been extended to you. You have put forth your best efforts to accomplish the work of this curriculum, handicapped, perhaps, by the fact that you have not had the preliminary preparation which would have qualified you to do this work in the most satisfactory way.

I desire to call your attention to the fact that the next class sent out from this institution will have a somewhat higher general average of preliminary training than you have had, and the class following that will have a somewhat higher training still, and after that still a higher training, and so on, until we bring the class as a whole to that standard which I have indicated as the minimum standard for admission to the beginning of this medical curriculum.

What does this mean for you? That if you do not yourselves, by your own efforts in the practice of your profession, make good these fundamental defects in your preliminary training, you are going to find that the men who succeed you, coming out of this very institution, because of their better training, are going to make the competition an ever closer and ever more severe one. It is characteristic of any great university which is improving its standards, improving its equipment, improving its teaching, that it is each year sending out a class of men better prepared to take up the work of the professions than any class which has preceded it; and consequently each year you will

face an increasing severity in the competition in the practice of your profession, because each successive class starts a little higher up than the preceding class.

Twenty years from now those of you who have not strenuously labored to make good these defects of your early training will find yourselves gradually dropping behind—"left in the race," "out of the competition," as the Frenchman would say. If any of you are in this condition, and can not set about improving yourselves, strengthening your powers, remedying your weaknesses and defects, you will at 45 (when you ought to be in the very prime of life) have already become "back numbers." At a time when you ought to be the leaders and inspirers of young men you will find them looking upon you with a certain degree of tolerance, as men who were trained under the older and obsolete conditions.

The second element in the training of a member of a learned profession, and particularly of such a profession as medicine, is an accurate knowledge of the sciences underlying and permeating (penetrating, so to speak) the medical curriculum itself, such as anatomy, physiology, pathology, histology, etc. Now, the fundamental characteristic of a university training in these subjects, as distinguished from an elementary or high school training, is in the results of the instruction itself. No university can lay claim to the title of university, in the sense in which I have been using it, if it be content simply to give to its students the knowledge of the particular subject in hand which up to the present time has been accumulated and formulated by the race. In other words, if the so-called university is simply a purveyor of acknowledged truth, of present information, it is not a university—whatever else it is. The institution must be concerned vitally about the increase of our stock of knowledge in all those things which concern the particular subject under discussion. If all that the medical student gets out of anatomy is a summary of our present knowledge of anatomy, he has not received a university training in any proper sense of that term at all.

The university trained man is the man who has been so

trained in methods and in principles that he has himself acquired a power to form an independent judgment upon the problems which present themselves to him in the course of his studies. Naturally the first element in this is an induction into our present knowledge. But that should be done by such methods that the student himself acquires an independent and self-centered power to judge of the proper criteria of knowledge, and to apply these criteria himself in an independent way. In other words, the man must have been trained by this process to what we call the power of original investigation, the power of research. Now this power may be obtained long before a man has mastered the entire realm of human knowledge. In fact, some of our greatest investigators in all lines of work have been men who prided themselves upon the fact that they were not encyclopedias of information on a vast range of subjects, but that they had the power to add to the real knowledge of the human race in some special field; that they had the power to increase the hold which man has over nature.

This, it seems to me, is distinctly the great contribution which the German nation has made to the thought and practice of our universities—viz., the definite announcement of the doctrine that no man is properly trained as a physician until he has reached a point where he has an independent judgment of his own in the lines of work in which he is going to practice, and in which at any time he can “check up” by his own power, criticising and testing the results of the work of any of the men which he may find marked down in the books to which he may refer. In other words, the medical student of the future is to be a man who is trained in the sciences underlying medicine in such a way that he is qualified to test what may be advanced as truth in any one of these subjects, because of his own grip upon sound methods, rather than upon his recollection of what somebody else may have said upon the same subject.

[To be continued.]

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## THE PANAMA PACIFIC DENTAL CONGRESS

[The war in Europe will not delay the exposition.—EDITOR.]

The committee of organization of the Panama Pacific Dental Congress wishes it distinctly understood that the Panama Pacific International Exposition will not be postponed, but will open on time, as will also the Panama Pacific Dental Congress. The authority for this statement is impressed in the following letter from President Moore, of the Exposition Company:



OPENS AUG. 30TH, 1915

*To the Commissioners from Foreign Nations and from the States and Territories of the United States to the Panama Pacific International Exposition.*

GENTLEMEN: There have been reports that the exposition, because of the war in Europe, would be postponed. It will not be postponed.

There have been published statements that the war in Europe would seriously affect the commercial or educational importance or the financial success of the exposition. They will not be so affected.

The exposition will open on its scheduled date—February 20, 1915. It will be completely ready when open. It is more than 90 per cent completed today. Nothing will be permitted to interfere with the consummation of the plans originally laid down.

Many friends and parties in interest have presented arguments in support of postponement for a year. These have been given anxious study and careful analysis. Most of them are merely counsels of timidity, based on nothing save a general feeling of doubt and uncertainty. These are sufficiently answered by saying that there is no longer any doubt or uncertainty as to the success of the exposition, whatever the situation in Europe may be. Other arguments for postponement have some practical foundation, but for every one of these there is a stronger and better argument for proceeding with our plans.

The exposition will, therefore, open as scheduled. There is not the

slightest reason to believe its success, in any phase, will be any less than that which was so certain before the European war broke out. Not one of the nations at war has notified us of an intention to withdraw her participation; France and Italy have, in fact, notified us that their plans remain unchanged. But, even if we should lose the others, the interest and importance of the exposition would still as a whole surpass all precedent.

As to the domestic participation, the effect of the European war seems likely to be rather advantageous than otherwise. The stimulus on exhibits is already felt, as American manufacturers become impressed with the opportunity given by the exposition for bringing their goods to the attention of the large distributors of central South America, the Orient and Canada.

As to attendance, all expert opinion agrees that there is nothing in the situation, even if continued through 1915, that will affect seriously the willingness and ability of the people of the western hemisphere and of the far east to visit the exposition. Some opinion is firm that travel to California may even be increased by the war. The decision of the exposition management has, however, been reached without regard to that consideration. We consider it our duty alike to our nation, to the participating nations, to our exhibitors and to ourselves, to carry out the plans as originally laid down, and which, now nearly at fruition, promise the most important, the most beautiful and the most successful exposition in history.

(Signed) CHAS. C. MOORE, President.

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## VACCINES FOR DENTAL TROUBLES

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[Recent editorial in "Medical Progress,"]

It is significant that pyorrhœa alveolaris, which was relegated entirely to the dental profession a few years ago, should recently have been taken as the subject for a thesis by a candidate for the degree of M.D. in the University of Dublin. Victor Greer Best, in the *Dublin Journal of Medical Science*, states that he chose this disease as a subject because many other diseases, medical and surgical, are the outcome of it; because its seriousness is apt to be overlooked, and—what is of high importance, and novel, as well—its progress can be checked and the condition permanently cured since the introduction of the vaccine treatment. This treatment may require to be carried out for a long period of time, and the vaccines should be prepared from the patient's own organisms, among which are likely to be found *streptococcus comglomeratus* and *diplostreptococcus rheumaticus*. There is no doubt in the author's

mind of the connection between pyorrhœa alveolaris, appendicitis, rheumatism, rheumatoid arthritis and gastrointestinal infections. Other conditions probably related are pernicious anæmia, acute endocarditis and nephritis, septic laryngitis and tracheitis, chronic gastritis and sapremic symptoms. It seems that the medical profession might well study this not uncommon condition profoundly from the pathological viewpoint. Mere oral sepsis is not sufficiently prophylactic; there is a constitutional predisposition that solicits investigation.

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### CHIEF PAUL'S GOLD TOOTH

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BY CLAUDE H. BIRMINGHAM

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[This good dental story appeared in "Home Life," and is interesting.—EDITOR.]

The grave gentleman with the high brow and the long legs—very long and thin—tells the story. He is sitting on a barrel of beer just within the arctic circle. His back is against a case of "mild-cured ham." His dress is a black sateen shirt, a pair of blue overalls, worn to gray at the seat, and a pair of beaded Indian moccasins, the toe of each being decorated with a triangle of red flannel. The trading post has no particular name, but it is known to every one in this part of Alaska as "Flat-Nosed Dempsey's." And the eleven log cabins around about it are called—collectively—"Hope."

"The proposition appealed to me," he began, speaking slowly and gravely, as was his manner. "To sit in the stern of a sixteen-foot boat and guide it down the two thousand-odd miles of the Yukon river for five dollars a day and board. A summer's job, sublime weather! The proposition appealed to me, I tell you frankly, boys. But, without allowing me one instant to think it over, the old dentist, plainly fearful of losing the best pilot on the river, hurried on to explain further:

"My son and I are dentists," said he. "We are first-class dentists. And we expect to do some good work for helpless sufferers before reaching Bering Sea. If you've ever had the toothache you'll understand. What do you say, Elijah?"



"Toothache touched the spot, boys. Toothache decided me. I slipped my hand into his and said: 'I'll take the job. I'll pilot the boat. I know every rock and riffle. I know every bar and slough. I am your man.'

"It seemed altogether a simple affair, an innocent matter of trade, whereby all should benefit. On my part, indeed, a combination such as I love—philanthropy and business.

"I hadn't even to row the boat. I made that bargain, for rowing blistered my hands. We were to drift with the current—nothing easier!

"On the morning of the second day, at five-fifteen by my watch, we reached White Rock; you know the place. A store with a mud roof, a sign, 'Bread for Sale,' and a graveyard.

"I aroused the fat father and the fat son. They were sleeping soundly, curled under a mutual blanket, and snoring for all they were worth. They had been going it for ten hours, straight.

"'Somewhere at last!' cried the old dentist the moment he got his eyes above the gunwales. 'Tie her up, Elijah; tie her up! We'll see if there's any money in the country.'

"He scrambled to his feet, dragging Jack with him, and in the excitement they both nearly tumbled overboard.

"It was amusing, the eagerness of the man to make a dollar. But was it quite professional? No. So I reminded him that the people weren't astir; that he'd better calm down and take things easy, for I wasn't used to being rushed.

"The boy grinned and winked. 'You watch daddy,' said he. 'Just you watch my daddy.' And he began to get the tools out of the grips.

"'It ain't every day a dentist like me travels this river. Mark that, Elijah,' snorted the old fellow himself, digging at his eyes with his knuckles.

"He was hiking up the bank with a pocket full of all sorts of weapons, when I hollered at him: 'Ain't you going to wash your hands and face? It'll look a lot better.'

"'You leave my dad alone,' snapped the kid. 'You ain't runnin' this.'

"And to his father he yelled: 'Go adead, daddy; go ahead, don't mind this gazabo!'

"But the old man came back, grumbling and swearing under his breath, and knelt down by the water's edge and wet his hands and face.

"Then I accompanied him to the store.

"Unable to make an impression on the front door, the old dentist strutted around to the rear and began hammering on the windows. The style was new to me.

"'Hi, there—hi, there!' he cried, shoving his face through a hole. 'Any one in this house—any one alive here?'

"'What's the matter—what's the matter?' growled a deep voice from within.

"'Nothing, brother; nothing at all,' shouted the old man. 'But how are your teeth? I'm a dentist, and I ain't got much time to waste.'

"'What's that you say?' bayed the voice.

"'I tell you I'm a dentist, brother; a first-class dentist,' yelled the old fellow impatiently. 'How are your teeth?'

"'How are my teeth?' rumbled the voice. 'I guess—well, I'll see.'

"There was a moment's silence, then we heard the creaking of bed-springs and the soft pad of bare feet hitting the floor.

"'Got him,' whispered the old man, giving me a wink.

"He did 'got him,' all right—got the tooth and the miserable couple of dollars.

"The storekeeper was a pretty decent sample of humanity, as far as size went. I had to admire him as he stood before us. But the old dentist rattled him. He rushed things too much. The man lost his wits; he didn't quite comprehend. He didn't know whether it was a hold-up or a business proposition. And when he spotted forceps protruding from two pockets in the old man's coat his eyes stuck out so violently that they could have been snipped off with a lady's scissors. He wanted to get back to the bed.

"But the old dentist held him by the arm and soothed him with such a rush of assurances, with such a flood of little flatteries. Pshaw! I never heard anything like it since I left my mother's knee. Nor had the poor fellow himself. He smiled like a small child getting candy, and sat down on the chair.

[To be continued.]



### THE "HOME RUN"

BY DR. B. J. CIGRAND

The base plate was not made of wax;  
A bag with sawdust filled  
Answered the purpose mighty well,  
As the runners round it "drilled."

The pitcher struck a crooked snag  
When "Sunburned Bill" took the bat,  
And clenched his teeth and sent the ball  
Clean through the diamond! How's that?

A fielder thought he had that liner  
Right easy in his paw;  
But it passed right through his butter fingers  
And landed on his jaw.

"The pitcher is easy!" came from the crowd.  
"We've got him going south!"  
And hanged if he didn't put a curve  
Against the umpire's mouth!

The umpire's tooth befractured lay  
Upon the dust and dirt.  
He laughed, and shouted: "I'm glad it's out!  
By jinks! it never hurt!"

The teams stopped playing. The umpire said:  
"Go on with the game! Don't quit!  
For teeth like that are cheap, by 'gum!'  
That 'crown' did never fit!"

His dentist on the "bleachers" sat.  
He enjoyed the game and fun  
Until the umpire saw him there.  
Then he made his "home run."

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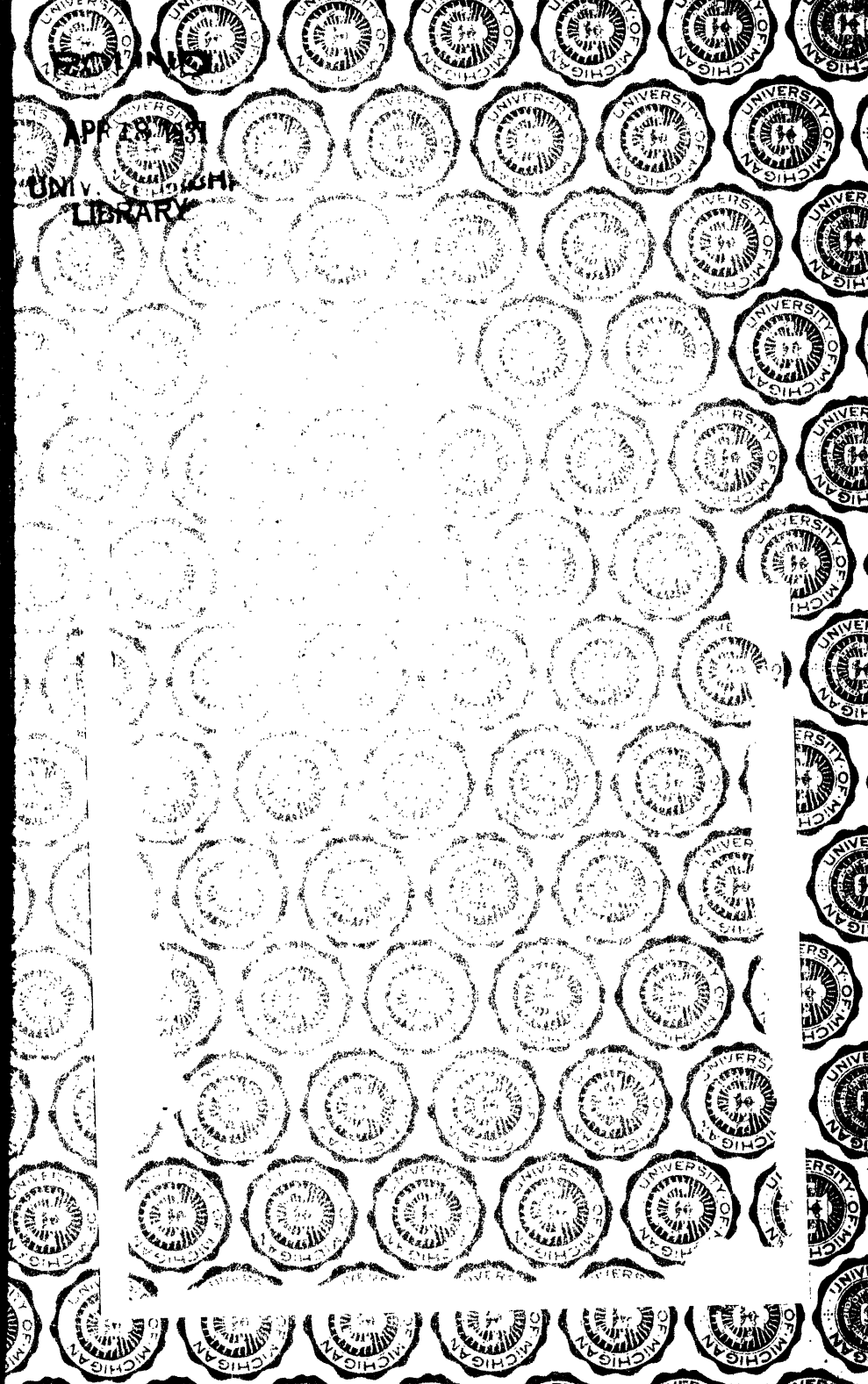
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